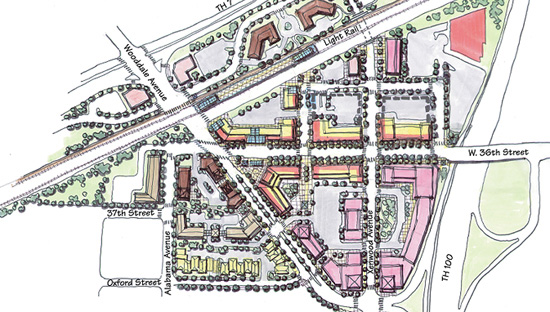
*Urban* and *regional planners* develop long- and short-term plans for the use of land and the growth and revitalization of urban, suburban, and rural communities and the region in which they are located. They help local officials alleviate social, economic, and environmental problems by recommending locations for roads, schools, and other infrastructure and suggesting zoning regulations for private property—work that requires forecasting the future needs of the population. Because local governments employ the majority of urban and regional planners, they often are referred to as community or city planners.

**Shapes and structures can be analyzed, visualized, measured, and transformed using a variety of strategies, tools, and technologies.**

(Source: <http://www.bls.gov/oco/ocos057.htm>)

Urban planners are trained as problem solvers. In order to find a solution to a specific problem, a planner may draw upon tools derived from economics, statistics, engineering, and architecture-among other fields. Perhaps the key skill that planners bring to their work is the ability to see the inter-connections between different facets of urban living. Planners learn to take a step back, to take a broader view of any subject. Planners are trained to deal with complexity and uncertainty as well as interpersonal and group dynamics needed to resolve disagreements. A related skill is a planners' ability to persuade others through strong communication skills, both oral and written. Planners need to be effective in communicating with many different kinds of people in a range of contexts.

Source: <http://www4.uwm.edu/sarup/program/planning/faq/aboutcareerplanning.cfm>

**You** are an urban planner who has been hired by the Virginia Beach City Planning Department to help re-develop a small planned community within the city’s boundaries. Your job is to plot the streets and identify where certain buildings are to be placed. Much research has already gone into the projected needs of this planned community and the city has decided upon the following. Here are your basic guidelines:

1. You are to act within the frame of the discipline of a city planner and use the tools associated with the profession in order to complete the assignment.
2. You must have 5 parallel streets.
3. You must have 2 transversal streets.
4. You need to name your streets; be sure to choose names that are school-appropriate.

5. The following buildings must be placed as directed by the city code:

* a gas station/mechanic and a sit-down restaurant (alternate exterior angles)
* an apartment building and a school (same-side interior angles)
* a health care building and a bank (vertical angles)
* a grocery superstore and a house of worship (corresponding angles)
* a library and a park (alternate interior angles)

You must write a reflection based on your work to answer the following questions. It should be in academic format (one-inch margins, 12-pt. academic font, double-spaced).

* Describe how you approached this problem. *For example: What were your original thoughts? What was unclear at first? How did you work through any difficulties? Why did you place the buildings where you did?*
* How do geometric relationships and measurements help us to solve problems and make sense of our world?

**Virginia Beach Objectives:**

**VBG.4** The student will apply the definition and theorems for perpendicular lines.

**VBG.8** The student will draw conclusions that lines and/or planes are parallel and show the relationships between pairs of angles in practical situations.

**Virginia State SOL Objectives:**

**G.3** The student will solve practical problems involving complementary, supplementary, and congruent angles that include vertical angles and angles formed when parallel lines are cut by a transversal

**Gifted Benchmarks:**

Students will analyze and interpret appropriate solutions to real world problems.

* *Analyzes potential solutions to a real world problem in order to either develop an original solution or select the most appropriate solution*
* *Experiments with approaches to solving a problem*
* *Demonstrates persistence*

Students will recognize the relevance of the essential question.

* *Evaluates the essential question in context*

Students will abstract meaning and apply it to new situations.

* *Builds on past experiences to find solutions*
* *Uses inferential skills to generate real life applications*
* *Develops products that are innovative and applicable to real world situations*

Students will plan, conduct, and complete complex assignments independently.

* *Sets realistic goals and systematically works to achieve them*
* *Make defensible decisions*
* *Problem solves*
* *Thinks critically with regards to complex task completion*
* *Breaks a complex task into manageable increments*